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# Band Arranging

Frederic Barker

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ARTHUR JORDAN  
CONSERVATORY OF MUSIC

A 7

BAND ARRANGING

By

FREDERIC BARKER

Thesis presented for the Degree of Master  
of Music in Music Education

1937

The Arthur Jordan Conservatory of Music

Approved by:

Miss Ada Bicking

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Butler University  
Jordan College of Music

## PREFACE

It is the purpose of this thesis to establish a plan of procedure which may serve as an aid in assisting the student of arranging to meet the required needs of the military band.

Two essential methods may be pursued, the practical and the artistic. "The practical method requires a thorough knowledge of the various instruments, their range, registers, tonal quality and color, peculiarities of fingering, effective possibilities etc., as well as the necessary understanding for individual and collective use of all the instruments. The artistic method, on the contrary, cannot be acquired beyond a certain degree, and while it may be assimilated in a small measure through analysis and study of the works of great composers, it must, for the greater part at least, be natural and inborn.

The beauty and effectiveness of an arrangement depends considerably upon the creative and imaginative faculties of the arranger as well as upon his musical taste and skill in planning for the most desirable and suitable instrumental grouping, tonal contrasts, etc."<sup>1</sup>

It is the hope of the author that this work may serve as an aid both to the student and to the serious minded musician in better understanding the importance of effective arrangements for the military band.

The writer wishes to acknowledge his grateful appreciation to the following persons for their aid in making this work possible. Particularly is he indebted to Miss. Ada Bicking for her invaluable aid and inspiration; to Miss. Olive Brown for her sympathetic interest in the critical reading of the manuscript; to Mrs. Geraldine Hodgins for typing the entire work; and to all the various authors and publishers for quotations from copyright works credited in the footnotes.

Frederic Barker

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1. Lake, M. L., The American Band Arranger, (1920) p 1.

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## BAND ARRANGING

### CHAPTER I

#### THE WOOD-WIND INSTRUMENTS

##### THE FLUTE

FORM

"The flute and the piccolo are the only wood-wind instruments played without a reed, the performer blowing across a hole in the side instead of into the end of the tube. As in all other wood-wind instruments, differences in pitch are obtained by opening and closing the finger-holes and keys. The flute is usually made of wood, though metal flutes, provided with various and elaborate key systems, are by no means uncommon. The most perfect modern type is known as the Boehm flute, named after Theobald Boehm, who, in 1832, modified and greatly improved its construction and intonation. Boehm flutes are made of wood or of silver - either solid or plated. The flute is the most agile of all the wind instruments, and with the exception of the piccolo, the highest in pitch. It is equally effective in staccato and legato passages. Repeated notes may be

rapidly executed by "doubling-tonguing."

- TONE "The sombre, low tones are very characteristic, but are useful only in solos or in soft combinations. The medium register is sweet and liquid; the highest notes, brilliant and piercing.
- USE "Symphony orchestras usually require three flute players, the third of whom is provided also with a piccolo, to be used when required by the score."<sup>1</sup>
- PITCH The flute is pitched in C. The alto flute is in F. In band music sometimes the flute is pitched in D flat.
- SOUND The flute in C will sound actual pitch, the flute in F a fifth lower than written, and the flute in D flat a half tone higher. The range of the flute is approximately three octaves.

#### THE PICCOLO

- FORM "The piccolo flute (Italian "piccolo" small) or piccolo is slightly less than half the size of the ordinary flute. Its technique is the same, but its range, an octave above that of the flute, is also slightly restricted at both ends of its compass, the lowest note being D and the highest useful note B flat.

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1. Johnston, Arthur Edward, Instruments of the Modern Symphony Orchestra and Band, (1930) p 28.

## TONE

"The first octave is weak and of little effect, its tones being better replaced by the second octave of the flute. The second octave of the piccolo is useful for imparting brilliancy in fortissimo passages, or it may be used for extending the upward range of the wood-wind, either forte or piano, by continuing a passage when it passes above the compass of the flute. The highest notes are shrill and piercing; they are excellent for tearing, whistling effects in music of a stormy or terrifying character.

## USE

"The use of the piccolo in the orchestra is incidental rather than normal when three flutes are employed, the third, or second and third players, take the piccolo part or parts where indicated in the score."<sup>1</sup> It is indispensable in band marches. The piccolo in D flat is used almost exclusively in band arrangements for street playing.

## PITCH

The piccolo is pitched in D and C flat.

## SOUND

"Parts for the piccolo are written an octave below their actual sound in order to avoid the constant use of the ledger lines above the staff. It is therefore

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1. Johnston, Arthur E., Instruments of the Modern Symphony Orchestra and Band, (1930)  
p 30.

a transposing instrument."<sup>1</sup> The C piccolo sounds an octave higher than the music is written. The D flat piccolo sound a minor ninth higher than the music is written. The range of the piccolo is approximately two octaves and a fifth.

#### THE OBOE

##### FORM

"The oboe is a reed instrument of conical bore terminating in a small flaring bell. It is played with a double reed consisting of two blades of very thin cane bound together in such a manner as to leave a small opening through which the air is blown into the instrument. The vibration of this reed sets the column of air in motion, thus producing the tone, the pitch of which is controlled by opening and closing the finger-holes and keys.

##### TONE

"The characteristic tonal quality of the oboe is reedy and somewhat nasal. Its lowest tones are loud and strident, and must be used with the utmost discretion. The highest tones are difficult of production and are of doubtful utility, the flute taking these pitches more effectively. It is in the medium register, com-

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930)  
p 30.

prising about an octave and a half, that the oboe excels in charm and flexibility. Its voice is pastoral, tender, and not without a touch of sadness, but it may also express joyous and graceful phrases with excellent effect.

- USE "The oboe is the most assertive of the wood-wind instruments, owing to its incisive tonal quality. Two, and often three oboes are employed in the symphony orchestras, the third performer being also provided with an English horn to be used when required by the score."<sup>1</sup>
- PITCH The oboe is pitched in C.
- SOUND The oboe sounds as written and has an approximate range of two octaves and a fifth.

#### THE BASSOON

- FORM "The bassoon is the natural bass of the oboe family. It is a double-reed instrument of conical bore with a tube about nine feet long, doubled upon itself for convenience of handling.
- TONE "The tones of the lowest octave are full and rich and of ample power to form a foundation for the entire wood-wind section. The medium register

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 32.

is not especially resonant but is characterized by an agreeable dryness which is absolutely unique. Possessing neither the incisive bite of the oboe nor the liquid capability for swelling and diminishing the tone, the bassoon rivals the flute itself in the rendition of staccato passages. Thus employed, its dry creaking tones are irresistibly comic and are of great service to the composer in depicting the humorous or the grotesque when used in combination with the clarinets and horns. The bassoon is extremely valuable for supplying a harmonic middle to the orchestral mass. The high notes from E flat up to B flat are of singularly appealing beauty and have been called the "vox humana tones."

#### PITCH

"The bassoon is a non-transposing instrument. The bass, tenor, and treble clefs are used in its notation. Symphony orchestras usually require three players, the third of whom is also provided with a contra-bassoon to be used when required by the score."<sup>1</sup> Four bassoons are often used in bands.

#### SOUND

The range of the bassoon, being a C instrument, is

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 44.



three and a half octaves, of which, however, the four or five highest tones are seldom used. The range extends from B flat below C up to E, the fourth space in the G clef.

#### THE DOUBLE BASSOON

**FORM** "This ponderous instrument, also called the contra-bassoon, is pitched an octave below the bassoon, to which it bears the same relation as does the double bass to the 'cello. It is usually about sixteen feet long, but it is doubled on itself four times to make it less unwieldy. Although it has a possible range of three and one half octaves, its principal use is to extend the downward range of the bassoon, thus supplying a solid, deep-pitched foundation for the wood-wind section.

**TONE** "The tones comprising the two lower octaves are the most valuable. They are employed both in "forte and piano" passages, though the subduing of the deepest tones requires great skill. The soft attack is all but impossible. The tonal quality differs little from that of the ordinary bassoon.

**USE** "Although not a modern instrument, its use was long restricted, owing to imperfections in intonation. Recent improvements have made its use more general, and the third bassoonist of the symphony and grand opera

orchestras is always provided with a double bassoon to be used when required by the score.

#### PITCH

"It is a transposing instrument in the same sense as in the double bass, notes are written an octave above their actual sound. Some double bassoons have an extra key for the low A."<sup>1</sup> The contra-bassoon is pitched in C.

#### SOUND

The sound and range are the same as for the regular bassoon of nine feet, except, that the tone is somewhat heavier in quality. It sounds an octave lower than written.

### THE CLARINET

#### FORM

"The clarinet is of cylindrical bore and is played with a mouthpiece to which is bound a single flat reed of cane. Clarinets have generally been made of hard wood or composition, but all metal instruments are now often preferred. Owing to its large range, variety of tone colors, facility of execution, and power of swelling and diminishing its tones, the clarinet is generally conceded to be the most useful, as well as the most beautiful, of all the wood-wind instruments.

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 38.



- TONE "The clarinet compass comprises four registers, which can be blended without perceptible break by the skillful performer. The first and lowest is dark and ominous. The second consists of four or five dull, weak, notes of inferior quality. The third or medium register is of singular beauty, combining nobility, tenderness, and that limpid quality for which the clarinet is distinguished. The highest register is brilliant, but difficult to subdue, hence useful mainly in forte passages."<sup>1</sup>
- USE The clarinet is used in the modern symphony orchestra and concert bands. It holds the same position in the band that the first violins do in the orchestra.
- PITCH "Clarinets are made in five or six different keys. All except the clarinet in C are transposing instruments. In the modern symphony orchestra two (or three) clarinets are pitched in B flat or A. Composition in sharp keys are usually scored for the A clarinet; in flat keys for the B flat clarinet."<sup>2</sup>
- NOTE The alto clarinet in E flat, the bass in B flat, and the small clarinet in E flat are all useful in the

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 38.

2. Ibid., p 38.

modern band arrangement.

SOUND      The B flat clarinet will sound a second lower than written, the clarinet a minor 3rd higher, the alto in E flat a 6th lower, the bass in B flat an octave and a major 2nd lower, and the small E flat a minor 3rd higher.

#### E FLAT CLARINET (HIGH)

FORM      "The E flat clarinet (high) is smaller and shorter in length than the B flat instrument, but otherwise it is practically the same.

TONE      "The tone quality in the best registers is brilliant and well adapted to lend assistance to the flute and piccolo in topping the band ensemble above the comfortable range of the B flat instruments. It is not ordinarily treated as a solo instrument; the tone is not very sympathetic and is inclined to be shrill in the upper register."<sup>1</sup>

USE      The E flat clarinet is used in bands to fill out the top register and give more body to the upper tones.

PITCH      It is pitched in E flat.

SOUND      It sounds a minor third higher and has a compass of approximately the same as the B flat.

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 82.

## THE SAXOPHONE

## FORM

"This instrument was invented in the year 1840 by the eminent Belgian instrument-maker and inventor, Adolph Sax, from whom it derives its name. Its novelty consists in the use of the clarinet single reed applied to a tube of extreme conical bore. The instrument thus combines important features of the clarinet and the oboe families - the single reed of the one with the taper bore of the other. The saxophone is made of brass, frequently silver-plated, and comprises a family of seven different sizes, of which the most generally used are the soprano in B flat, the alto in E flat, the tenor in B flat, the baritone in E flat, and the bass in B flat. Of these five the soprano is the least pleasing and the alto and the tenor the most. In recent years the C melody saxophone has become popular.

## TONE

"In quality of tone the saxophone possesses the characteristic reediness of the clarinet, to which, however, is added a certain brazen tinge, combined with a string quality akin to that of the 'celle. The volume is greater, but the flexibility is inferior to that of the clarinet or the bassoon.

## USE

"Saxophones have been more extensively used in military bands than in the orchestra, though composers from about the middle of the last century, particularly the French, have occasionally introduced one or more saxophones in operatic and other serious works. Nowadays saxophone is not only a prominent feature in dance and popular music combinations but is being more and more used generally.

## PITCH

"The playing range of all the saxophones is practically the same, and regardless of actual pitch sounds, are always written for the treble clef, and with the exception of the C melody treated as transposing instruments in B flat or E flat."<sup>1</sup>

## SOUND

The range of the saxophones is approximately two octaves and a fifth. The B flat soprano sounds a second lower, the alto a sixth lower, the tenor an octave and a second lower, the baritone an octave and a sixth lower, and the bass two octaves and a second lower. The seldom used contra bass is three octaves and a second lower.

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 48.

## THE SAXOPHONE

The diagram illustrates the pitch ranges of six saxophone types, arranged in three pairs. Each pair consists of a range diagram and an 'Actual sound' example.

- Soprano (Bb) and Alto (Eb):** The Soprano range is shown from B4 to B5. The Alto range is shown from B3 to B4. The 'Actual sound' example for Soprano shows a melodic line in treble clef. The 'Actual sound' example for Alto shows a melodic line in treble clef.
- Tenor (C) and Tenor (Bb):** The Tenor (C) range is shown from B3 to B4. The Tenor (Bb) range is shown from B2 to B3. The 'Actual sound' example for Tenor (C) shows a melodic line in treble clef. The 'Actual sound' example for Tenor (Bb) shows a melodic line in treble clef.
- Baritone (Eb) and Bass (Bb):** The Baritone range is shown from B2 to B3. The Bass range is shown from B1 to B2. The 'Actual sound' example for Baritone shows a melodic line in treble clef. The 'Actual sound' example for Bass shows a melodic line in treble clef.

THE WOOD-WINDS

Flute

Piccolo

Oboe

Bassoon

Double Bassoon

Clarinet

Alto Clarinet

Bass Clarinet

E♭ Clarinet

Sounds

B♭ sounds

A sounds



## BRASS INSTRUMENTS

## THE TRUMPET

(Valve Trumpet)

- FORM "The trumpet is a brass instrument, the tube of which is one-half the length of that of the French horn in the same key, and it therefore sounds an octave higher than the horn. The modern orchestral trumpet is provided with the usual three valves, which give it a complete chromatic scale within its compass of about two and one-half octaves. The mouthpiece differs from that of the horn in being cup-shaped rather than conical.
- TONE "The quality of tone of the trumpet is brilliant, noble, and wonderfully penetrating in fortissimo passages. Its softer accents are clear and pure, still retaining the characteristic nobility and incisiveness of the louder tones. Trumpets like cornets and horns may be muted by means of a pear-shaped device set in the bell.
- USE "Although the older scores and indeed many modern ones call for trumpets in a variety of keys - C, D, E flat, and F, etc., the trumpets in B flat and A are used almost exclusively, the trumpeters, like hornists, transposing their parts at sight when transposition is
- PITCH

necessary. The two instruments offer the same facility as B flat and A clarinets for playing in flat and sharp keys. In the case of the trumpet, however, only one instrument is necessary - that in B flat - as its pitch may be instantly lowered to A by drawing a telescopic slide or by employing a special valve mechanism."<sup>1</sup>

## SOUND

The range of the trumpet is approximately two octaves and a fifth. The B flat sounds a major second lower and the A sounds a minor third lower than the written note.

## THE CORNET

## FORM

"This instrument is similar to the valve trumpet in all respects except that its bore is slightly conical instead of cylindrical. The mouthpiece also differs from that of the trumpet in being less cup-shaped, thus tapering more gradually into the main bore of the instrument. These two features combine to render the tone of the cornet coarser and thicker than the clear, brilliant tone of the trumpet.

## TONE

"Owing to its ease of blowing and its pleasing, mellow tone, the cornet is still much used in

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 52.



amateur and in small professional orchestras;  
also in military bands.

USE "The cornet is rare in the modern symphony orchestra, though it was of undoubted utility during the period prior to the introduction of the valve trumpet. Two cornets in addition to two trumpets, were then employed, their special function being to supply the chromatic tones lacking on the plain trumpet.

PITCH "It is made in B flat and is provided with a slide or valve mechanism which instantly transforms it into an "A" instrument. In compass and in the manner of writing it is precisely like the valve trumpet. Cornets, like other brass instruments, may be muted by means of a pear-shaped device set in the bell."<sup>1</sup>

SOUND The range of the cornet is approximately two octaves and a fifth. The B flat sounds a major second lower than the written note and the A a minor 3rd lower.

#### THE FLUEGELHORN

FORM "This is a brass instrument of the saxhorn type,

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 54.

resembling the cornet in appearance, but of larger and more conical bore with flaring bell.

TONE "The tone is of a peculiarly sweet, clear, and beautiful quality and is a distinct addition to the band in solo or other combination."<sup>1</sup>

USE The fluegelhorn is sometimes used in symphony orchestras and in brass bands.

PITCH The pitch of this instrument is the same as the B flat cornet.

SOUND The fluegelhorn sounds one step lower than the music is written and has an approximate compass of two octaves and a fifth. It is sometimes called the alto cornet.

#### THE FRENCH HORN

FORM "The original form of the French horn (hand horn or wladhorn) consisted of from nine to eighteen feet of coiled brass tubing, the precise length of which depended upon the key in which the horn was pitched.

This instrument possessed very limited chromatic possibilities, and it has become practically obsolete. In its place the modern valve horn in F is used almost ex-

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 86.

clusively. Its tube is about twelve feet long, and by virtue of its valve mechanism it can produce all chromatic tones within its range of three and one-half octaves. As in all brass instruments, the tone is produced by the vibration of the lips pressed against the mouthpiece, which in the case of the horn, is small and funnel-shaped rather than cupped.

TONE "The tone of the horn, except when forced and rendered brassy" for the production of dramatic effects, is pure and noble. Its lovely, mellow tones blend as perfectly with the wood-wind as with the brass choir. The horn thus forms a connecting link between these two sections of the orchestra.

USE "The horn is of inestimable value, both as a melody and as a harmony instrument."<sup>1</sup> Usually four horns, pitched in E flat are used in the modern band, and great care must be exercised to obtain the correct distribution of the chord tones. The horns occupy the position of the second violins and the violas of the orchestra.

PITCH The horns are pitched in five keys: namely, C, D, E flat, F and B flat. These different pitches are obtained by supplying each horn with various lengths of

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 50.

tubing according to the pitch desired.

**SOUND** The horn when pitched in the two most common keys will sound lower than the playing note. In E flat the horn will sound a 6th lower, in F a 5th lower, in D a 7th lower, and in B flat a 2nd lower.

### THE ALTO

**FORM** "The E flat alto belongs to the saxhorn group of brass instruments. There are several types of altos, the familiar bell-up type, the bell front type (like an over-grown cornet) and the circular, known as the mellophone (or concert horn). The latter instrument is used frequently in school or amateur orchestras, as well as in bands.

**TONE** "The tone is inferior to that of the horn, but this lack is made up by the comparative security of intonation in general usage."<sup>1</sup>

**USE** The alto is used largely in bands because of the ease of producing the tone and the evident satisfaction of young musicians in amateur organizations.

**PITCH** By means of a small tube or crook, the alto is pitched in the following keys: E flat, D, B flat, F and C.

**SOUND** The sound of the mellophone is much coarser than that

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 88.

of the horn of the same pitch. It has the same relative transposition as that of the horn with an approximate range of two octaves and a fifth.

#### THE TROMBONE

- FORM "This instrument differs radically from the other brasses in its possession of a free-running telescopic slide instead of valves. This slide enables the performer to adjust the speaking length of his instrument and its consequent pitch to a nicety. In fact, the precise manipulation of the slide of the trombone is analogous to the correct location of the finger on the fingerboard of stringed instruments. There are also trombones with valves, but as they possess no advantage beyond mere facility of execution and are inferior in tone and precision, they are not used in first-class orchestras.
- TONE "The tone of the trombone is akin to that of the trumpet, less brilliant but somewhat richer and fuller. This difference in tonal quality is due in part to the inner formation of the mouthpiece, which, though cup-shaped, is less shallow than that of the trumpet. Although fortissimo of trombones surpasses that of any other instrument, an exquisite pianissimo is also obtainable. The former is gorgeously majestic; the latter, mysteriously solemn.

Trombone may be muted like trumpets and horns.

USE Of the three trombones used in a symphony orchestra, all may be tenor instruments (in B flat) or the lowest part may be played by a bass trombone (in G). In bands the same is true of the parts."<sup>1</sup>

PITCH Trombones are pitched in B flat; the bass trombone is in G. "All trombones are treated as non-transposing instruments"<sup>2</sup> Both the tenor and bass clefs are used in the notation. The range of the trombone is approximately two octaves and a fifth.

SOUND All trombones being treated as non-transposing instruments sound the actual note played.

#### THE BARITONE

FORM "The baritone is a brass instrument belonging to the saxhorn family and is pitched in B flat, an octave below the B flat cornet."<sup>3</sup>

"It is the most "pliable" brass instrument in the band and can be utilized in more different ways than any other. It may be used as a melody instrument, with the

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 56.

2. Ibid., p 56.

3. Ibid., p 89.

cornet, for individual solos, for counter melodies.

It is often required to play in unison with the trombones at times when the large instruments are given prominent parts."<sup>1</sup> It is also used to play accompaniment or on the bass part.

TONE "It possesses a full sonorous tone and practically the technical facility of the cornet, making it invaluable as a solo instrument in the band."<sup>2</sup>

USE "The baritone occupies a similar position in the band to that of the violincello in the orchestra. Baritones are equipped with three valves and operate exactly as does the cornet, but sound an octave lower."<sup>3</sup>

PITCH Baritones are pitched in B flat.

SOUND The baritone speaks an octave and a second lower when read from the G clef. It speaks the actual pitch when read from the bass clef (F clef). The baritone has an approximate range of two octaves and a fifth.

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1. Laurendeau, L. P., The Practical Band Arranger, (1911) p 20.
  2. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 89.
  3. Laurendeau, L. P., The Practical Band Arranger, (1911) p 20.



## THE EUPHONIUM

**FORM** "The euphonium is indential with the baritone with the exception that it is provided with a fourth valve which extends the compass downward an augmented fourth. One type of euphonium has an extra bell, smaller and less flaring than the regular bell. A special valve operates to divert the air column into this bell, which produces a tone of different quality, more like that of the trombone, where such a tone is desirable for solo or ensemble combinations."<sup>1</sup>

**TONE** The tone of the euphonium is like that of the baritone.

**USE** The euphonium has the same facility and use as the baritone.

**PITCH** It is pitched the same as the baritone.

**SOUND** The euphonium speaks an octave and a second lower when read from the treble clef and actual pitch when read from the bass clef. By the addition of the fourth valve it may extend its tonal range downward to B flat below the baritone range.

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 89.



## THE TUBA

FORM "The tuba is the double bass of the brass section of the orchestra. It differs essentially from the trumpet in that its tube is conical and not cylindrical, that is to say, it gradually widens from mouthpiece to bell. The tuba is usually provided with four valves, the fourth of which gives the instrument an extended and valuable downward range.

TONE "The tone-quality of the tuba is full and organ-like in soft and medium passages. When played to the limit of its power it takes on a brilliancy and "snap" very much like that of the trombone. It blends exceedingly well with the string basses, the effect of the combination being to impart to the very low tones a clarity and definiteness of pitch unattainable by any other means.

USE "Prior to its introduction into the orchestra by Wagner, the tuba was used only in military bands. It is now a recognized member of the orchestral family, having entirely supplanted the ophicleide, the deep-toned brass instrument formerly used."<sup>1</sup>

PITCH Tubas are made in several different keys - F, E flat, C, and B flat. They are invariably treated as non-trans-

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 58.

posing instruments when used in symphony, grand opera orchestras, and in bands.

**SOUND** Since the tubas are treated as non-transposing instruments, they sound the actual pitch of the note played. They have an approximate range of three octaves.

### THE BUGLE

**FORM** "The bugle is likened to the cornet except that it has no valves. The tube of the original bugle was doubled around several times, making the instrument handier for service use in the army and navy. In recent years the short model has been supplemented by the longer trumpet model. The modern military bugle and trumpet is one and the same instrument. Apart from company (military) buglers, fife, bugle and drum corps (field music) are regularly organized and while ordinarily playing independently, sometimes join in with the band on the march, special parts being printed or prepared. These instruments are also extensively used by Boy Scouts, Girl Scouts, military academies, etc."<sup>1</sup>

**TONE** The tone of the bugle is not unlike that of the trumpet

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 86.

except that it is more brassy.

USE "The bugles and trumpets most used are pitched in  
G with a tuning slide to F, and known as the regulation  
and G and F trumpet (or bugle). The B flat bugle (large  
French model) also called the clarion has of late been  
PITCH adopted by many of the leading regimental drum corps;  
this instrument being pitched the same as the regular  
cornet and trumpet, enables the bugle corps to play  
more readily with the band in the usual band keys, if  
not actually from the cornet or trumpet parts.

SOUND "The trumpet and bugle without valves can only play tones  
belonging to the series of harmonics found in a sounding  
tube; that is, the so-called "open tones" playable on any  
brass instrument. On the five tones here given, all the  
signal calls used in the army and navy are based, being  
developed in varied melodic outline and rhythm."<sup>1</sup> The  
average range and "open tones" as played are as follows:  
C, G, C, E, and G beginning with middle C on the G clef,  
ranging upward.

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1. Johnston, A. E., Instruments of the Modern Symphony  
Orchestra and Band, (1930) p 86.

Cornet & Trumpet      Bb sounds      A sounds  
 Fluegelhorn  
 French Horn  
 Alto Horn  
 Trombone  
 Baritone & Euphonium      Euphonium 4th valve  
 Tuba in Eb      BBb      4th valve extension  
 Bugle

The musical score is written on eight staves. The first staff is for Cornet & Trumpet, Fluegelhorn, and French Horn. The second staff is for French Horn and Alto Horn. The third staff is for Alto Horn and Trombone. The fourth staff is for Trombone, Baritone & Euphonium, and Euphonium 4th valve. The fifth staff is for Baritone & Euphonium, Euphonium 4th valve, and Tuba in Eb. The sixth staff is for Tuba in Eb and Bugle. The seventh staff is for Bugle. The score includes notes, rests, and various markings such as 'Bb sounds', 'A sounds', and '4th valve extension'.

## PERCUSSION INSTRUMENTS

## KETTLE-DRUMS

(Timpani)

FORM "The kettle-drum consists of a hemispherical bowl of brass or copper, over which a parchment head is stretched. By varying the tension of the head by means of six or eight screws working on an iron ring, higher or lower tones of definite pitch are obtainable. Various mechanical means have been devised for changing the pitch of the drum by a single screw or lever (after equalizing the tension of the head by separate screws), and only the high cost of drums so equipped has prevented their general adoption.

TONE "Timpani are played with two drumsticks, the heads of which are usually solid balls of felt. Such sticks produce a velvety, musical quality of tone not unlike that of the double bass pizzicato. For dramatic effects, where harshness and terrifying noise are the aim of the composer, the use of wood-headed sticks, sometimes covered with leather, is indicated. Timpani possess an almost unlimited dynamic range from the faintest tap or rumble to a thunderous fortissimo.

Detached notes are used for accentuating the rhythm, and the roll is invaluable for adding life and motion to sustained chords.

USE "A pair of timpani consists of a large and a small drum; three or more drums are employed with additional drummers on exceptional occasions. As the timpanist must be prepared to vary the tuning of his drums during performance, he must possess a fine ear, if not, indeed, absolute pitch.

PITCH "The range of the timpani, with all chromatic intervals, is from F (space below bass clef) up to F fourth line of the bass clef. Recently pedal timpani have been quite widely adopted. These have the same ranges as the hand tuned timpani, but they vary their pitch very quickly through a foot-pedal mechanism. Even melodic passages are possible for them."<sup>1</sup>

SOUND The large drum is tuned from F up to C and the small one from B flat up to F, overlapping one whole tone.

#### THE BASS DRUM

FORM "This instrument gives a deep, booming sound of no definite pitch. It is played with a single, soft-

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 64.



headed drumstick with which tolerably close rolls are possible by the skillful performer. In loud passages its function is to augment the general volume of sound and especially to accentuate the rhythm. Struck softly it produces a dark, ominous effect which may be well employed in certain dramatic situations."<sup>1</sup>

TONE	The drum has no definite tone.
USE	It is used in both bands and orchestras to accentuate the rhythm.
PITCH	It has no definite pitch.
SOUND	The drum gives a deep booming sound.

#### THE SNAPE DRUM

FORM	"This small drum derives its name from the thin strings of gut, called snares, which are stretched across its lower head. The peculiar rattling sound characteristic of this drum is due to the vibration of these snares against the lower head when the upper head is beaten. The snare drum is played with two sticks of hardwood. The technique of the snare drum is a difficult one to acquire, many years of
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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 66.

practice being required to produce a close, even roll. This is obtained not by rapid single strokes, but by the alteration of double strokes with each hand."<sup>1</sup>

TONE        The snare drum has no definite tone.

USE        "The use of this drum in the orchestra is chiefly confined to the production of a military atmosphere."<sup>2</sup>

            In the marching band it is the rhythm beater.

PITCH      The snare drum has no definite pitch.

SOUND      It has a peculiar rattling sound.

#### THE CYMBALS

FORM        "A pair of cymbals consists of two discs of resonant metal formed not unlike large dinner plates and about twelve inches in diameter. They are held by means of a loop of leather attached to the center of the instrument and passed around the hand of the performer. Cymbals are played, not by clashing them together, but by striking their edges with a sliding movement. Like other art instruments, cymbals may be of fine or poor quality, producing a brilliant lasting, and terrifying tone, or an impotent, dull smash, like broken crockery. From motives

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 66.
  2. Ibid., p 66.



of economy, one of the cymbals is often attached to the bass drum, the two instruments being played by the same performer. But as the cymbals lose much of their characteristic clash by this treatment, it is not followed in first-class orchestras. One cymbal is sometimes held in the hand and struck with the bass drumstick a single stroke or even a roll. Thus used the cymbal takes on something of the character of the gong. When short notes are required, the tone is damped by quickly bringing the cymbal against the chest."<sup>1</sup>

TONE The cymbal has the characteristic ring of metal against metal.

USE It is used in band and orchestras to accentuate the rhythm.

PITCH The cymbal has an indefinite pitch.

SOUND The cymbals produce a brilliant, lasting and terrifying sound.

#### THE GONG

FORM "This instrument has come to us from China and is a round plate of hammered bronze with the edge turned

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 68.

up like a large tambourine. It is struck with a soft bass drumstick. Its effect in fortissimo is that of a terrible clangorous uproar which is of the utmost service to the composer when depicting scenes of horror. Struck more gently, or pianissimo, its effect varies between the solemn and the lugubrious. It is used mostly in connection with deep chords, sustained by the brass instruments or by the lowest tones of clarinets and bassoons."<sup>1</sup>

TONE The tone of the gong varies according to the amount of force used to strike it.

USE Its use is characteristic and often employed for scenes of unusual noise and confusion. It is an unusual instrument and is often used to attract attention.

PITCH It is of indefinite pitch.

SOUND It produces a terrible rumbling sound.

#### THE TRIANGLE

FORM "This instrument, as its name implies, consists of

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 70.

a bar of steel bent in triangular form with one angle open. It is hung by a cord to a music stand or any suitable bracket and is struck with a small steel rod.

TONE	"It produces a bright, tinkling sound, without definite pitch, and is used to enhance light, fairy-like movements by marking the rhythm. The trill is of frequent occurrence and is executed by alternately striking two sides of the triangle." <sup>1</sup>
USE	It is used, as explained above, to enhance light, fairy-like movements by marking the rhythm.
PITCH	The triangle has indefinite pitch.
SOUND	The triangle produces a bright tinkling sound.

#### THE CHIMES

FORM	"Orchestral chimes consist of a series of accurately-tuned tubes of steel or bell-metal. They are graduated in size like organ pipes and are suspended from a suitable framework of wood. The tubes are struck near the upper end with a wooden or leather mallet.
TONE	"Their tone effectively simulates that of deep-toned

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 70.

cathedral chimes, and they serve in the orchestra to produce an atmosphere of solemnity, especially in music of a religious character."<sup>1</sup>

PITCH Usually the tones are from low A to high E.

SOUND Orchestral chimes constitute almost a counterpart of the cathedral chimes.

#### THE XYLOPHONE

FORM "This is an instrument of great antiquity which consists of twenty-seven (or a few more) hardwood blocks, graduated in length, mounted on taut cords, and all set in a suitable framework. The blocks are arranged in two rows, like the keys of a piano, and are accurately tuned. The instrument is played by striking with two light, flexible beaters of willow or boxwood.

TONE "The tone of the xylophone is hard, dry, and rather hollow in quality. Very rapid passages including trills, are possible by the skillful performer.

USE "Its use in the symphony orchestra is occasional and solely for the production of the unusual - especially humorous effects."<sup>2</sup> It has found a

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 68.

2. Ibid., p 72.

wonderful place in the concert band and is used to great advantage as a solo instrument with band accompaniment. "A recent invention is the vibraphone, with wooden bars and metal resonators like the xylophone and marimba, save that there are disc-like vibrators in the resonators that are actuated by electricity. A not unpleasant vibrato is thus imparted to the tone struck."<sup>1</sup>

PITCH      The xylophone is pitched the same as the piano.  
SOUND      The sound of this instrument has been likened to the rattling bones of a skeleton.

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1. Johnston, A. E., Instruments of the Modern Symphony Orchestra and Band, (1930) p 72.

## CHAPTER II

### CLASSIFICATION OF INSTRUMENTS

#### LESSON I

This first lesson involves the making of a chart of the various instruments according to pitch. This chart should be arranged in the following manner.

- Step 1. In the first column place all the instruments, both F and G clef, segregating each clef, that play a given note and sound the same note, or its octave, either higher or lower. Name this column the C GROUP.
- Step 2. In the second column place all the instruments, both F and G clef, that play a given note and sound one half step higher. Name the column the Db GROUP.
- Step 3. In the third column place all the instruments, both F and G clef, that play a given note and sound a major second higher. Name this column the D GROUP.
- Step 4. In the fourth column place all the instruments, both F and G clef, that play a given note and sound a minor third higher. Name this column the Eb GROUP.
- Step 5. In the fifth column place all the instruments, both F and G clef, that play a given note and sound a perfect fifth lower. Name the column the F GROUP.
- Step 6. In the sixth column place all the instruments, both F and G clef, that play a given



note and sound a perfect fifth higher. Name this column the G GROUP.

Step 7. In the seventh column place all the instruments, both F and G clef, that play a given note and sound a minor third lower. Name this column the A GROUP.

Step 8. In the eighth column place all the instruments, both F and G clef, that play a given note and sound a major second lower. Name this column the Bb GROUP.

Step 9. In the ninth column place all the other instruments not included in the above columns. Name this the SPECIAL GROUP.

## LESSON II

In this lesson the object is to construct a chart using middle C as the playing note. A straight line is drawn across the middle of the paper, leaving a margin of about two inches on each side. At the left end of the line are written the words, "playing middle C".

Step 1. At the left end mark off in ledger lines, either above or below, the number of half steps, one to a line, required to mark the proper interval for the instruments of the C GROUP, when that group is playing the tone C. Name the group.

Step 2. To the right of the last set of lines, mark off in a similar manner the number of lines required for the Db GROUP. Name the group.

Step 3. To the right of the last set of lines, mark off in a similar manner the number of lines required for the D GROUP. Name the group.

Step 4. To the right of the last set of lines, mark off in a similar manner the number of lines required for the Eb GROUP. Name the group.

Step 5. To the right of the last set of lines, mark

off in a similar manner the number of lines required for the F GROUP. Name the group.

- Step 6. To the right of the last set of lines, mark off in a similar manner the number of lines required for the G GROUP. Name the group.
- Step 7. To the right of the last set of lines, mark off in a similar manner the number of lines required for the A GROUP. Name the group.
- Step 8. To the right of the last set of lines, mark off in a similar manner the number of lines required for the Bb GROUP. Name the group.
- Step 9. On a separate sheet of paper construct a chart for the various instruments of the SPECIAL GROUP. Name each instrument and name the proper interval required for that instrument.

### LESSON III

The problem in this lesson is to construct a chart using middle C as the sounding note. A straight line is drawn across the middle of the paper, leaving a margin of about two inches on each side. At the left end of the line are written the words, "sounding middle C".

- Step 1. At the left end mark off in ledger lines, either above or below, the number of half steps, one to a line, required to mark the proper interval for the instruments of the C GROUP, when that group is sounding the tone C. Name the group.
- Step 2. To the right of the last set of lines, mark off in a similar manner the number of lines required for the Db GROUP. Name the group.
- Step 3. To the right of the last set of lines, mark off in a similar manner the number of lines required for the D GROUP. Name the group.
- Step 4. To the right of the last set of lines, mark

off in a similar manner the number of lines required for the Eb GROUP. Name the group.

Step 5. To the right of the last set of lines, mark off in a similar manner the number of lines required for the F GROUP. Name the group.

Step 6. To the right of the last set of lines, mark off in a similar manner the number of lines required for the G GROUP. Name the group.

Step 7. To the right of the last set of lines, mark off in a similar manner the number of lines required for A GROUP. Name the group.

Step 8. To the right of the last set of lines, mark off in a similar manner the number of lines required for the Bb GROUP. Name the group.

Step 9. On a separate sheet of paper construct a chart for the various instruments of the SPECIAL GROUP. Name each instrument and name the proper interval required for that instrument.

### CHAPTER III

#### TRANSPOSITION OF INSTRUMENTS

##### LESSON IV

In answering the following questions, it is necessary to acquire a thorough knowledge of the transposition of instruments in order to ascertain the correct tone each instrument must play to sound a given tone.

- Question 1. When the Eb cornet plays F, what tone will the oboe play to sound in unison with the Eb cornet?
- Question 2. When the oboe plays G, what tone will the Bb clarinet play to sound in unison with the oboe?
- Question 3. When the flute in C plays A, what tone will the Bb trumpet play to sound in unison with the flute?
- Question 4. When the piccolo in Db plays Eb, what tone will the bass clarinet play to sound in unison with the piccolo?
- Question 5. When the alto saxophone plays Ab, what tone will the horn in D play to sound in unison with the alto saxophone?
- Question 6. When the baritone saxophone plays D, what tone will the tenor saxophone play to sound in unison with the baritone saxophone?
- Question 7. When the clarinet in A plays C, what tone will the french horn play to sound in

- Question 7. unison with the clarinet in A?
- Question 8. When the alto horn plays B, what tone will the alto clarinet play to sound in unison with the alto horn?
- Question 9. When the bass saxophone plays Bb, what tone will the horn in Eb play to sound in unison with the bass saxophone?
- Question 10. When the Bb soprano saxophone plays E, what tone will the Bb cornet play to sound in unison with the soprano saxophone?
- Question 11. When the trombone, G clef, plays Db, what tone will the horn in F play to sound in unison with the trombone?
- Question 12. When the baritone, G clef, plays B, what tone will the alto saxophone play to sound in unison with the baritone?

#### LESSON V

The following questions are answered in a similar manner as those in lesson four.

- Question 1. When the bassoon plays F, what tone will the Bb cornet play to sound in unison with the bassoon?
- Question 2. When the tuba in F plays Ab, what tone will the oboe play to sound in unison with the tuba?
- Question 3. When the baritone plays G, what tone will the clarinet in A play to sound in unison with the baritone?
- Question 4. When the tuba in BBb plays Eb, what tone will the baritone saxophone play to sound in unison with the tuba?
- Question 5. When the Bb cornet plays Eb, what tone will the tuba in Eb play to sound in unison with the cornet?

- Question 6. When the tuba in C plays E, what tone will the piccolo in Db play to sound in unison with the tuba?
- Question 7. When the alto clarinet plays A, what tone will the tuba in F play to sound in unison with the alto clarinet?
- Question 8. When the baritone saxophone plays Eb, what tone will the clarinet in A play to sound in unison with the baritone saxophone?
- Question 9. When the baritone plays F, what tone will the baritone saxophone play to sound in unison with the baritone?
- Question 10. When the trombone plays B, what tone will the cornet in A play to sound in unison with the trombone?
- Question 11. When the bass clarinet plays F#, what tone will the tuba in BBb play to sound in unison with the bass clarinet?
- Question 12. When the clarinet in Eb plays C#, what tone will the piccolo in Db play to sound in unison with the clarinet?

## LESSON VI

The following questions are answered in a similar manner as those in lesson five.

- Question 1. When the cornet in Bb sounds G, what tone will the oboe, alto saxophone, horn in F, clarinet in A, and piccolo in Db play, to sound in unison with the cornet?
- Question 2. When the horn in F sounds A, what tone will the trombone, baritone saxophone, alto horn, soprano saxophone, and cornet in A play, to sound in unison with the horn in F?
- Question 3. When the alto saxophone sounds F, what tone will the baritone, tuba in F, cornet in Bb, piccolo in Db, and horn in D play, to sound in



unison with the alto saxophone?

- Question 4. When the clarinet in A sounds Eb, what tone will the bass clarinet, alto clarinet, oboe, horn in D, and tuba in BBb play, to sound in unison with the clarinet in A?
- Question 5. When the piccolo in Db sounds Bb, what will the trombone, baritone - G clef, alto clarinet, horn in F, and cornet in A play, to sound in unison with the piccolo in Db?
- Question 6. When the horn in D sounds D, what tone will the clarinet in Bb, the cornet in A, alto saxophone, tenor saxophone, and baritone play, to sound in unison with the horn in D?
- Question 7. When the bassoon sounds Ab, what tone will the tuba in Eb, piccolo in Db, clarinet in A, alto saxophone, and tenor saxophone play to sound in unison with the bassoon?
- Question 8. When the tuba in BBb sounds C, what tone will the clarinet in Bb, alto saxophone, cornet in A, piccolo in Db, and horn in D play, to sound in unison with the tuba in BBb?

## LESSON VII

In answering the following questions each letter is regarded as the key note of the major scale. Since the aim is to establish a working knowledge of the art of transposition, the answers will be in theory only and not suitable for use on the instruments, at least not in pleasing combinations.

When the trombone plays the 1st step, or C F G B E :

---

The flugelhorn will play the 3rd step, or (here give five answers)

The horn in C will play the 3rd step, or " " " "

The baritone will play the 7th step, or " " " "

The horn in D will play the 3rd step, or (here give five answers)

The baritone g clef, will play the 7th step, or " " "

The alto horn will play the 5th step, or " " " "

The French horn will play the 3rd step, or " " " "

The cornet in Eb will play the 3rd step, or " " " "

The tuba in F will play the 5th step, or " " " "

The euphonium, g clef, will play the 6th step, or " "

NOTE - Step 1: find what the trombone will sound when it plays the 1st step of the scale or C.

Step 2: find in what key the fluegelhorn must play in order to sound in the sounding key of the trombone.

Step 3: find the tone on the given step of this new key for the fluegelhorn.

Step 4: proceed as outlined above for the remaining letters and instruments.

## LESSON VIII

Lesson eight follows the same line of development as lesson seven.

When the piccolo in Db, plays the 3rd step, or B C# D# F# G#:

---

The bassoon will play the 7th step, or (here give five answers)

The alto saxophone will play the 2nd step, or " " "

The tenor saxophone will play the 6th step, or " " "

The soprano saxophone will play the 4th step, or " " "

The alto clarinet will play the 7th step, or " " "

The bass clarinet will play the 5th step, or " " "

The English horn will play the 2nd step, or (here give five answers)

The tenor clarinet in F will play the 3rd step, or " " "

The clarinet in Bb will play the 3rd step, or " " "

The clarinet in A will play the 6th step, or " " "

NOTE - Step 1: find the key note of the proper scale in which the piccolo will play when B is the 3rd step.

Step 2: find the sounding key of the piccolo.

Step 3: find the key in which the bassoon must play to sound in the sounding key of the piccolo.

Step 4: find the tone on the given step in this new key for the bassoon.

Step 5: proceed as outlined above for the remaining letters and instruments.

## LESSON IX

Lesson nine follows the same line of development as lesson eight.

When the baritone plays the 1st step, or Bb D Eb F A:

---

The cornet in Bb will play the 2nd step, or (here give five answers)

The euphonium will play the 4th step, or " " "

The horn in Eb will play the 3rd step, or " " "

The French horn will play the 6th step, or " " "

The tuba in Eb will play the 7th step, or " " "

The horn in Bb will play the 5th step, or " " "

The fluegelhorn will play the 4th step, or " " "

The trombone, g clef, will play the 6th step, or (here give five answers)

The saxhorn (baritone) will play the 3rd step, or " "

The horn in D will play the 2nd step, or " "

NOTE - The method of procedure is identical with that of lesson eight.

## LESSON X

Lesson ten follows the same line of development as lesson nine.

All answers will be built upon the major scales.

When the alto clarinet plays the root of the 4th triad, or

Bb C E A F

---

The bass saxophones will play the 3rd triad, or (give five triads)

The bass clarinets will play the 6th triad, or " " "

The English horns will play the 3rd triad, or " " "

The Db piccolos will play the 2nd triad, or " " "

The Bb clarinets will play the 5th triad, or " " "

The A clarinets will play the 2nd triad, or " " "

The alto saxophones will play the 6th triad, or " " "

The tenor saxophones will play the 4th triad, or " " "

The tenor clarinets will play the 7th triad, or " " "

The bassoons will play the 4th triad, or " " "

NOTE - The class procedure is the same as indicated for lesson nine except that the answers should be in triad form.

## LESSON XI

Lesson eleven follows the same line of development as lesson ten. All answers will be built upon the minor scales.

When the fluegelhorn plays the 3rd step, or C G D Ab F

---

The horn in D will play the 2nd step, or (here give five answers)

The baritone will play the 5th step, or " " " "

The cornet in Eb will play the 6th step, or " " " "

The euphonium g clef, will play the 6th step, or " " " "

The tuba in Eb will play the 7th step, or " " " "

The cornet in A will play the 4th step, or " " " "

The trombone will play the 3rd step, or " " " "

The French horn will play the 7th step, or " " " "

The alto horn will play the 3rd step, or " " " "

The tenor horn, g clef, will play the 2nd step, or " " " "

## LESSON XII

Lesson twelve follows the same line of development as lesson eleven. All answers will be built upon the minor scales.

When the clarinet in A plays the root of the 2nd triad, or

b d $\sharp$  f $\sharp$  c $\sharp$  e

---

The tenor clarinets will play the 3rd triad, or  
(here give five triads)

The tenor saxophones will play the 6th triad, or  
(here give five triads)

The Db piccolos will play the 4th triad, or (here give five triads)  
 The English horns will play the 7th triad, or " " "  
 The bass clarinets will play the 3rd triad, or " " "  
 The baritone saxophones will play the 6th triad, or " " "  
 The bassoons will play the 2nd triad, or " " "  
 The alto saxophones will play the 2nd triad, or " " "  
 The bass saxophones will play the 5th triad, or " " "  
 The alto clarinets will play the 4th triad, or " " "

### LESSON XIII

Lesson thirteen follows the same line of development as lesson twelve. All answers are built upon the minor scales.

When the horn in F plays the root of the 1st triad, or

b f a e d

---

The trombones will play the 2nd triad or (here give five triads)  
 The baritones, g clef, will play the 3rd triad, or " "  
 The alto horns will play the 6th triad, or " " "  
 The A clarinets will play the 4th triad, or " " "  
 The Eb cornets will play the 7th triad, or " " "  
 The bassoons will play the 5th triad, or " " "  
 The flugelhorn will play the 4th triad, or " " "  
 The euphoniums, g clef, will play the 2nd triad, or " "  
 The D horns will play the 3rd triad, or " " "  
 The F tubas will play the 6th triad, or " " "



## CHAPTER IV

### ARRANGING FROM HYMN TUNES FOR REED INSTRUMENTS

The arrangement of instruments into choirs or family groups for scoring is as follows:

"Flute group	Flutes and Piccolos
Clarinet Choir	E♭ Clarinet B♭ Clarinets Alto Clarinet Bass Clarinet
Double reed group	Oboes Bassoons
Saxophone quartet	Soprano Alto Tenor Baritone
Trumpet group	Trumpets Trombones
Saxhorn and mixed group	Cornets Altos Baritones Basses Fluegelhorn French Horn
Percussion group	Drums and traps Tympani Bells and Xylophone

"NOTE - To score for a quartet, one must keep within the bounds of the quartet, not only in register but also in balance.

"The quality and strength of tone of individual instruments is the guide for a proper balance. The entire compass of a group or family of instruments determines the extent of the register.

"When scoring for small mixed combinations of reed and brass, the reeds will be more numerous than the brass.

In full band arrangements one should keep in mind the relative dynamic values of each choir or family of instruments and endeavor to score so that no part will be over-balanced."<sup>1</sup>

#### ARRANGING FROM HYMN TUNES

"The first lesson in band arranging must be of an elementary nature, and since the hymn tune affords an excellent example of four part harmony, it is best suited for the student's first efforts.

"The beginner must necessarily make small arrangements, quartets, double quartets, and other small combinations before he attempts to arrange for the full band.

"Selecting a good key for the band instruments, avoiding the sharp keys as much as possible, depends considerably upon a working knowledge of the following four important points:

- 1st - Acquaintance with the various quartets and choirs used in the band.
- 2nd - A thorough knowledge of the good and bad registers, best notes etc.
- 3rd - A thorough knowledge of balance among the different voices or instruments.
- 4th - Experience with the various combinations of instruments, both in single and double quartets of brass and reed, or mixed choirs of both brass and reed."<sup>2</sup>

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1. White, W. C., Military Band Arranging, (1924) p 71.

2. Ibid., p 39.

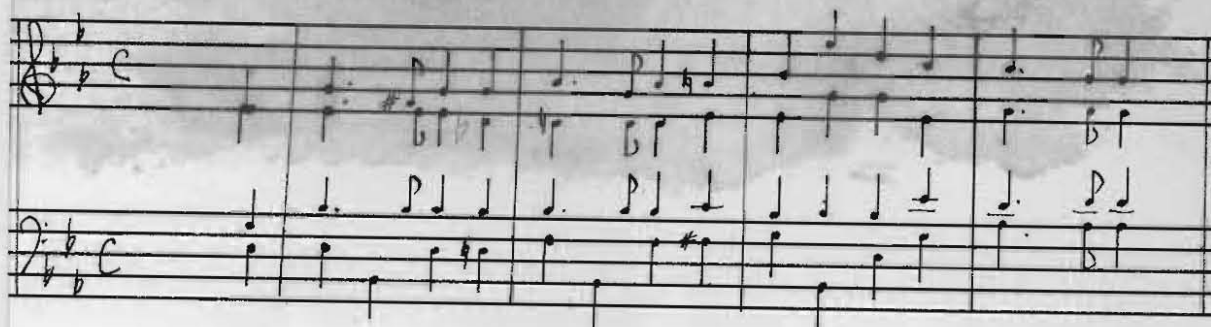
The reeds of the military band consist of the following instruments: The flute and piccolo, the oboe and bassoon, the clarinets and the saxophones.

In the lessons that follow an attempt will be made to illustrate the above important points.

## ARRANGING FROM HYMN TUNES

## LESSON XIV

The following measures of a well known hymn tune are used to illustrate the primary points of band arranging.



In the succeeding measures the good and bad features will be discussed briefly.

Example No. 1

A musical score for three Clarinet parts, labeled 'Clarinet' on the left of each staff. The notation is in 4/4 time and G major. The first staff shows a melodic line with some chromaticism. The second and third staves show more rhythmic and harmonic patterns. The notation includes various note values, rests, and accidentals (sharps and flats).

## ARRANGING FROM HYMN TUNES

## LESSON XIV (Continued)

## Example No. 2

Oboe

E♭ Clarinet

B♭ Clarinet

Bassoon

In the first example the arrangement is not good as the flute part lies too low and would be overbalanced by the clarinets in the Chalumeau register.

In the second example the mixture of single and double reed is a good arrangement as all the notes of the various instruments lie in good registers and are of good quality.

- EXERCISE 1. Using the four measures of the hymn tune given above, arrange a clarinet quartet for the following instruments: E♭, B♭, alto and bass clarinets.
- EXERCISE 2. Using the same four measures arrange for the following instruments: two B♭, alto and bass clarinets.
- EXERCISE 3. Using the same four measures arrange for the following instruments: two oboes and two bassoons.

- EXERCISE 4. Using the same four measures arrange for the following instruments: soprano, alto, tenor and baritone saxophones.
- EXERCISE 5. Using the same four measures arrange for the following instruments: two oboes, Bb clarinet and bassoon.
- EXERCISE 6. Using the same four measures arrange for the following instruments: oboe, Eb clarinet, Bb clarinet, alto clarinet.
- EXERCISE 7. Using the same four measures arrange for the following instruments: flute, oboe, Eb clarinet, Bb clarinet, bassoon.
- EXERCISE 8. Using the same four measures arrange for a quartet of your own choice.
- EXERCISE 9. Using an entire hymn arrange for a quartet of single reeds.
- EXERCISE 10. Using an entire hymn arrange for a quartet of single and double reeds.

#### LESSON XV

"To strengthen weak sounding tones, or to soften harsh sounding registers of some of the instruments, it becomes necessary to use some of the other instruments in unison with those tones. The low register of the flute may be strengthened by the addition of the Bb clarinet or the soprano saxophone playing in unison. Likewise the flute will soften the clarion register of the Bb clarinet when played in unison with it. It will also soften and enhance the oboe from twice lined C to its octave. The bassoon playing in unison with the Bb clarinet on the "throat register", the weakest part of the instrument, will greatly improve those tones. The lowermost register of the bassoon is also greatly improved by the bass clarinet, as far as its compass will permit, because those tones are usually rough and harsh. The Eb contrabass sarrusophone may also be used for the same purpose."<sup>1</sup>

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1. White, W. C., Military Band Arranging, (1924) p 41.



In the following example, doubling for balance and softening effect will be noticed in the case of the flute and oboe, the bass clarinet and bassoon. The quartet, 2nd and 3rd Eb clarinets, the alto clarinet and the bassoon carry the four parts in actual pitch. The oboe may be considered the soprano instrument just as well as the 2nd clarinet, but its quality may be lost in the tone of the other clarinets. The flute playing in the octave with the oboe will help to establish the soprano voice in the Eb clarinet part and soften that instrument. The parts given to the solo and 1st Bb clarinet is an expansion of the alto and tenor voices. This is a very good arrangement for small combinations. The addition of a quartet of saxophones would add considerable color to the combination.

- EXERCISE 1. Add a quartet of saxophones to the following exercise, using care in the doubling of parts in order not to destroy the balance.
- EXERCISE 2. Select a good hymn tune and arrange a ten voice combination with good balance.
- EXERCISE 3. Select a good hymn tune and arrange a fourteen voice combination with good balance.
- EXERCISE 4. Select a good hymn tune and arrange for a sextette of saxophones with good balance.

LESSON XV ~~60~~

Example No. 3

Flute

Q. 605.

E♭ Clarinet

S & 1st Bb Clarinets

2d & 3d Bb Clarinets

Alto Clarinet

Bass Clarinet

Passcon

## CHAPTER V

### ARRANGING FROM HYMN TUNES FOR BRASS INSTRUMENTS

#### LESSON XVI

The same procedure will be followed for the brass instruments as was used for the reeds.

The brass choir of the military band consists of the following instruments: the trumpet and trombone, the cornet, fluegelhorn, and baritone, the French horn and altos, and the tuba (sousaphone).

Illustrations on the same hymn tune, already given for the reeds, are here for the brass.

Example No. 4

Bb Cornet or

Fluegelhorn

Eb Alto or

French Horn

Baritone or

Tenor

Euphonium

Exam-  
note:  
The  
faci-  
trum  
only  
part

## LESSON XVI (Continued)

## Example No. 5

## Bb Fluegelhorn (1st)



## Bb Fluegelhorn (2nd)



## Eb Alto or

## French Horn

## Euphonium



Example five is considered a good arrangement. The flugelhorn parts may be played by cornet or by trumpets.

EXERCISE 1. Arrange the same four measures for two Bb trumpets and two Bb trombones.

EXERCISE 2. Arrange the same four measures for two Bb cornet, baritone and euphonium.

EXERCISE 3. Arrange the same four measure for a quartet of French horns.

EXERCISE 4. Arrange the same four measures for Bb cornet, 1st and 2nd Eb altos and baritone.

EXERCISE 5. Arrange the same four measures for two French horns and two Bb trombones.

CHAPTER VI

ARRANGING FROM HYMN TUNES FOR MIXTURES OF REED

AND BRASS

LESSON XVII

The following arrangements are considered good and may

Example No. 6

Bb Fluegelhorn



Alto Saxophone



Tenor Saxophone



Euphonium



Example No. 6 is a mixture of reed and brass instruments. It is considered a good arrangement because the reed horns and the euphonium are both a similar type of instruments and blend admirably well together.



## LESSON XVII (Continued)

Example No. 7

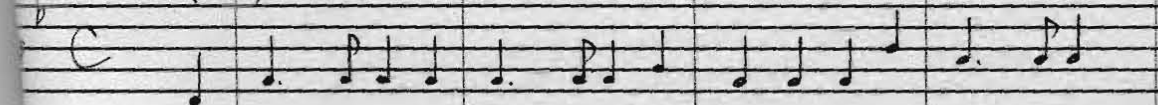
Alto Saxophone



French Horn (1st)



French Horn (2nd)



Baritone Saxophone



tenor saxophone on the tenor part,  
2nd horn in Eb on the bass part.

EXERCISE 2. On the same four measures arrange  
for a second, and different quartet  
of brass and saxophones.

EXERCISE 3. On the same four measures arrange  
for a third, and different quartet  
of brass and saxophones.

EXERCISE 4. Arrange for a fourth, and different  
quartet of your own choice using a  
new hymn tune.



# CHAPTER VII

## ARRANGING FROM HYMN TUNES FOR FULL BAND

### LESSON XVIII

At the following places for full band and notice

Example No. 8

Flutes

Oboes

E♭ Clarinet

S & 1st E♭ Clarinets

2d & 3d E♭ Clarinets

Alto Clarinet

Bass Clarinet

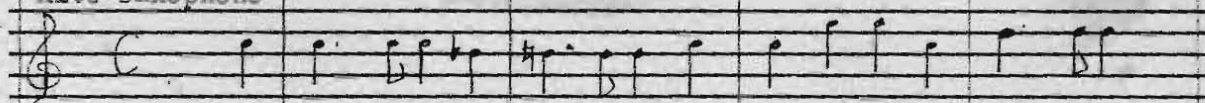
## LESSON XVIII (Continued)

## Exercise No. 8

## Soprano Saxophone



## Alto Saxophone



## Tenor Saxophone



## Baritone Saxophone



## Bassoons



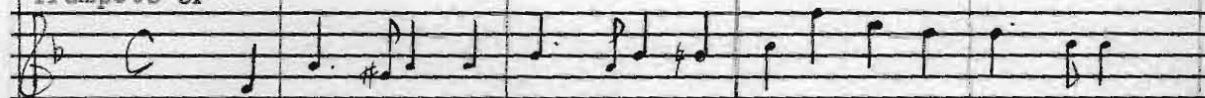
## S &amp; 1st Bb Cornet



## 2d &amp; 3d Bb Cornet



## Trumpets or



## 2d &amp; 3d Bb Cornet



## Fluegelhorn



## LESSON XVIII (Continued)

## Example No. 8

## 1st &amp; 2nd Altos



## 3d &amp; 4th Altos



## Baritones



## 1st &amp; 2d Trombones.



## Basses



A careful analysis of this score illustrates how simple four-part hymn may be distributed for full band. Many changes, of course, are possible. When the melody lies too high for the solo and 1st clarinets to play it an octave higher (not in this case), the 2nd clarinets may play it as written. The 1st and 3rd clarinets would play the alto and tenor parts in the upper octave. The 1st baritone would play the melody an octave lower, or the inner parts might be given to the bassoons, and the melody to the alto saxophone. Many combinations are possible with each new selection.

EXERCISE 1. Arrange a good hymn tune for full band.

CHAPTER VIII

ARRANGING FROM PIANO MUSIC FOR FULL BAND

LESSON XIX

"The selection of a good key for band is, of course, necessary. Sharp keys being avoided as much as possible. The piano music to be arranged should be studied at the keyboard and any added parts penciled in."<sup>1</sup>  
If, on the other hand, too many notes or duplicated parts need rearranging or if new parts or notes must be added in certain measures at the piano is the place to do it, with pencil and not ink.

"One essential feature in arranging from piano music is to give, as nearly as possible, an exact reproduction of the composer's meaning. Sometimes this can only be approximated.

Example No. 9

Military March - Cobb

Piano

The musical score for "Military March - Cobb" is presented on four staves. The first two staves represent the right hand, and the last two represent the left hand. The key signature is one sharp (F#), and the time signature is 2/4. The score includes various musical notations such as notes, rests, and dynamic markings like 'f' (forte) and 'mf' (mezzo-forte). There are also handwritten annotations in pencil, including 'ff' and 'd.' (diminuendo). The score is divided into measures by vertical bar lines.



## LESSON XIX (Continued)

Example No. 10

Military March - Cobb

Db Piccolo

Flute

Oboe

Eb Clarinet

S & 1st Bb Clarinets

2d & 3d Bb Clarinets

Alto Clarinet

Bass Clarinet

Dynamic markings:  $f$ ,  $ff$ ,  $mf$ ,  $p$ .

# LESSON XIX (Continued)

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## Example No. 10

The musical score for Example No. 10 is written for a band. It consists of seven staves, each representing a different instrument or group of instruments. The music is in 2/4 time and features a melodic line with various dynamics and articulations.

- Soprano Saxophone:** The first staff. The music starts with a melodic line in the right hand and a bass line in the left hand. Dynamics include *ff* and *mf*.
- Alto Saxophone:** The second staff. The music starts with a melodic line in the right hand and a bass line in the left hand. Dynamics include *ff* and *mf*.
- Tenor Saxophone:** The third staff. The music starts with a melodic line in the right hand and a bass line in the left hand. Dynamics include *ff* and *mf*.
- Baritone Saxophone:** The fourth staff. The music starts with a melodic line in the right hand and a bass line in the left hand. Dynamics include *ff* and *mf*.
- Bassoon:** The fifth staff. The music starts with a melodic line in the right hand and a bass line in the left hand. Dynamics include *ff* and *mf*.
- 1st & 2nd Bb Cornets:** The sixth staff. The music starts with a melodic line in the right hand and a bass line in the left hand. Dynamics include *ff* and *mf*.
- 2nd & 3rd Bb Cornets or Trumpets:** The seventh staff. The music starts with a melodic line in the right hand and a bass line in the left hand. Dynamics include *ff* and *mf*.



## LESSON XIX (Continued)

## Example No. 10

1st & 2d Altos  
*f*

3d & 4th Altos  
*f*

Baritone  
*f*

1st & 2d Trombones  
*f*

Basses  
*f*

Drums  
*f*

1. White, W. C., Military Band Arranging, (1924) p 64.

## BIBLIOGRAPHY

- Clappé, Arthur A., The Principles of Wind-Band Transposition, Carl Fischer, Inc., New York, 1921
- Dana, W. H., How To Arrange Band Music, J. W. Pepper & Co., Philadelphia, Pa., 1906
- Forsyth, Carl, Orchestration, 2nd edition, Macmillan Co., London, 1936
- Heacox, Arthur E., Project Lessons in Orchestration, Oliver Ditson Co., Boston, 1928
- Kling, Henri, Transposition, Carl Fischer, Inc., New York, 1842
- Lake, M. L., The American Band Arranger, Carl Fischer, Inc., New York, 1920
- Laurendeau, L. P., The Practical Band Arranger, Carl Fischer, Inc., New York, 1911
- Mackie-Byer, The Band Leader's Guide, J. W. Pepper & Son, Philadelphia, Pa., 1906
- Mason, Daniel Gregory, The Art of Music, National Society of Musicians, New York, 1873
- Prout, Ebenezer, The Orchestra, Augener & Co., London, 1899
- Rimsky-Korsakow, Principles of Orchestration, Edition Russe de Musique, Berlin, 1912
- White, William C., Military Band Arranging, Carl Fischer, New York, 1924
- Woods, Glen H., Public School Orchestras and Bands, Ditson & Co., Boston, 1920